

WHAT IS CLAIMED IS:

1. An extrusion molding system, comprising:
 - a die having a first opening with a unvariable shape and a second opening with a variable shape;
 - 5 an extruder which feeds a material to the die;
 - a first gear pump arranged between the die and the extruder; and
 - an electronic control unit (ECU) which controls the first gear pump, the ECU being programmed to conduct a first sequence control to change the shape of the second opening and a second sequence control to change a rotation speed of the first gear pump in synchronism with a change in the shape of the second opening.
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2. The extrusion molding system as claimed in claim 1, wherein the ECU is further programmed to conduct a third sequence control to change a rotation speed of the extruder in synchronism with the change in the rotation speed of the first gear pump.
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3. The extrusion molding system as claimed in claim 2, wherein the third sequence control is conducted such that a timing of starting and stopping the change in the rotation speed of the extruder is advanced with respect to a timing of starting and stopping the change in the rotation speed of the first gear pump.
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4. The extrusion molding system as claimed in claim 1, further comprising:
 - a pressure sensor arranged at an inlet of the first gear pump,
 - wherein the ECU is further programmed to conduct a feedback control to maintain substantially constant a pressure indicated by the pressure sensor.
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5. The extrusion molding system as claimed in claim 1, further comprising:

5 a branch part arranged upstream of the first and second openings of the die, the branch part dividing a passage inside the die into at least two portions; and

a valve mechanism arranged in at least one of the at least two portions of the passage, the valve mechanism adjusting a flow rate of the at least one of the at least two portions.

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6. The extrusion molding system as claim in claim 1, further comprising:

a second gear pump arranged between the die and the extruder, the second gear pump being connected in series to the first gear pump;

15 a main passage which connects the first and second gear pumps, the main passage being connected to the first opening of the die; and

a bypass passage connected to the main passage between the first and second gear pumps, the bypass passage being connected to the second opening of the die.

20 7. The extrusion molding system as claim in claim 1, further comprising:

a second gear pump arranged between the die and the extruder, the second gear pumps being connected in parallel to the first gear pump,

wherein the first gear pump is connected to the first opening of the die, and the second gear pump is connected to the second opening of the die.

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8. A method of controlling an extrusion molding system which comprises a die having a first opening with a unvariable shape and a second opening with a variable shape, an extruder which feeds a material to the die, and a first gear pump arranged between the die and the extruder,

the method comprising:

conducting a first sequence control to change the shape of the second opening; and

conducting a second sequence control to change a rotation speed of the first gear pump in synchronism with a change in the shape of the second opening.

9. The method as claimed in claim 8, further comprising:

conducting a third sequence control to change a rotation speed of the extruder in synchronism with the change in the rotation speed of the first gear pump.

10. The method as claimed in claim 9, wherein the third sequence control is conducted such that a timing of starting and stopping the change in the rotation speed of the extruder is advanced with respect to a timing of starting and stopping the change in the rotation speed of the first gear pump.

11. The method as claimed in claim 8, wherein the system further comprises a pressure sensor arranged at an inlet of the first gear pump,

the method further comprising:

conducting a feedback control to maintain substantially constant a pressure indicated by the pressure sensor.

12. The method as claimed in claim 8, wherein the system further comprises a branch part arranged upstream of the first and second openings of the die, the branch part dividing a passage inside the die into at least two portions, and a valve mechanism arranged in at least one of the at least two portions of the passage, the valve mechanism adjusting a flow rate of the at least one of the at least two portions,

the method further comprising:

opening and closing the valve mechanism to control an amount of the material to be supplied to the at least two portions.